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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RICHARD, CHARLES R

ART UNIT PAPER NUMBER

1712

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,786

Applicant(s)

PATEL, BHARAT B.

Examiner

C. R. Richard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-70 is/are rejected.
- 7) ☒ Claim(s) 1-70 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/2/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following. Applicant has used many words in peculiar and confusing ways. This is of course to be avoided.

For example, "a blend of one or more copolymers" seems to be a contradiction in terms; that is, what is a blend of one component? This phrase is used repeatedly in the abstract, body of the specification and claims. In context, the polyethylene seems to be outside the blend (see entire specification and dependent claims).

Applicant states that "black materials" may be used in fluid loss prevention (see for example, paragraph 11 of the specification). Is this to be understood as being any material that is black in color, regardless of its content, such as a piece of paper colored black with a crayon? Applicant's statement that "those materials [black materials] do not always work in actual operation" only adds to this confusion (see paragraph 11 of the specification). Note that the Examiner was unable to find evidence that "black materials" is some kind of term of art that would not require definition in the specification.

There is also the use of "base" or "base fluid". A "base fluid" is usually taken to refer to one fluid or one component of an overall composition, and is usually that component in highest proportion in a mixture. This is opposed to "based" or "based fluid" which usually refers to a mixture itself that is based on a particular, stated component. The use of these words/phrases is critical to understanding the scope of this invention, so Applicant may not be loose with terminology here. For example, is it

really possible to have a non-aqueous fluid that contains more than a trivial amount of water? It appears that Applicant is saying this in, for example, paragraph 17 of the specification. If such a fluid can contain more than a little water, then can it be mostly water, all water, etc? If the definition were to be so broad, then what would "non-aqueous" mean?

Appropriate correction is required. Applicant should keep in mind the prohibition against adding new matter (35 USC 132) when making the corrections required here.

Claim Objections

2. Claims 1-70 are objected to because of the following. In the same way as they are in the specification (see above), "a blend of one" and the use of "base" here are confusing. This is especially true when proceeding from the independent to the dependent claims.

Claims 5 and 45 state that a component is water (not "a" water), yet dependent claims 7 and 47 state that "the" water is a brine. What is "water" then according to Applicant? This is no trivial matter, as it does make assessing the scope of claims 5 and 45 difficult. Would, for example, a 45% by volume solution of ethanol in water be includable under "water" here? A 95% by volume solution of isopropanol in water?

The Examiner questions whether phthalic anhydride is truly "alpha,beta-ethylenically unsaturated" as stated in claims 13 and 52. There is a difference between a phenyl group and an ethylene group; one Kekule structure alone is not a truly accurate representation of a phenyl group in any case.

The confusion associated with the use of the phrase "black material" has been discussed above. This phrase is used in claims 29 and 64.

Claims 39-41 refer to "settling". Does Applicant intend this to mean what is given on page 15-16 of the specification? If so, a simple statement on the record will suffice.

As to the molecular weight recited in many of the claims, the Examiner notes that the type of molecular weight is not stated. "Average" is not sufficient in defining type as there are multiple types of average molecular weight in use.

Appropriate correction is required in all of the above claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 8-10, 19-20, 23-26, 28, 31-35, 42-46, 48-49, 56, 58-60, 61, 63, 66-68 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitacek in US Patent 3,140,747. Mitacek disclose a water-in-oil emulsion well/drilling fluid.

Mitacek teaches a drilling fluid that is a water-in-oil emulsion containing polyethylene, polypropylene, copolymers of ethylene and propylene or mixtures of these (see column 2, lines 37-42). The polymers may have a molecular weight of 10,000 to 300,000 and a melt index of 1-6 (see column 3, lines 40-45). The oil employed may be

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topped crude oil, gas oil, or diesel among others (see column 7, lines 15-30). Additives such as bentonite and barite may be used (see column 4, lines 58-63). Water may be present at 9-45 weight percent or 20-42 weight percent (see Table in column 7).

The simple steps of combining/adding in claims 42-69 and circulating a drilling fluid in claim 70 are implied in the disclosures of Mitacek that the fluid is multicomponent and may be a drilling fluid, respectively.

5. Claims 1-2, 8-12, 14-15, 33, 42, 48-51, 53-54 and 68 are rejected under 35 U.S.C. 102(b) as being anticipated by Newberry in US Patent 4,518,509. Newberry discloses particulate compositions that may be placed in petroleum systems (see Abstract).

Newberry compositions may be formed by combining polyethylene and a treated reaction product of a C₂₀₋₂₄ or C₃₀₊ alpha-olefin and maleic anhydride with a mixture of mineral oil and kerosene (see Examples 1-4). Note that the maleic copolymers are treated with an amine or alcohol before being used in these compositions, but the language of claim 11 and 50 is "comprising reacting" the olefin and anhydride. The polymers may have a molecular weight up to 50,000 (see column 8, lines 15-20 and column 11, lines 1-10). Clearly, Newberry's compositions are inherently capable of being used as drilling fluids.

Claim Rejections - 35 USC § 103

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-12, 14-51, 53-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. in US Patent 4,306,980 in view of Carnicom in US Patent 4,436,636. Brandt and Carnicom disclose various invert emulsion well servicing/drilling fluids.

Brandt teaches invert emulsions useful as well service/drilling fluids wherein the oil phase is based on a petroleum oil such as diesel and the aqueous phase is based on fresh water or a brine (see column 2, lines 5-40 and column 4, lines 12-15). A copolymer of an alpha-olefin of 10-24 carbons with maleic anhydride among other copolymers may be included (see column 2, lines 41-60). It is disclosed that the fluid has good/improved filtration control/fluid loss and suspension properties (see column 1, lines 15-40) – note that these properties correspond to purposes for using this fluid.

Brandt teaches directly or indirectly, all of the limitations of the rejected claims, except for the use of polyethylene.

Carnicom teaches an invert emulsion type well service fluid containing polyethylene that gives minimal solids settling and reduced fluid loss (see column 1, lines 35-57) – note that it is explicitly taught that the polyolefin is at least partly the reason for these settling and fluid loss properties (see column 2, lines 28-32), and of course, these properties correspond to purposes. The oil phase may be based on diesel and the aqueous phase may be based on fresh water or a brine (see column 2, lines 5-28). The polyethylene may have a melt index of 0.4 and particle size of 25 microns (see column 2, line 60-65). An organophilic lignite, an organophilic clay that may comprise bentonite and/or a weighting agent like barite may be included (see column 3, line 15 to column 4, line 11).

The following quotation from a CCPA case is relevant:

It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. ... the idea of combining them flows logically from their having been individually taught in the prior art. *In re Kerkhoven*, 205 USPQ 1069, 1072 (CCPA 1980).

Thus, given that purposes of the fluids of Brandt and Carnicom are for well servicing where solids settling (as in cuttings) and fluid loss are an issue, the rule of Kerkhoven applies, and it would have been obvious to one of ordinary skill in the art to combine these fluids. This is especially true, given that the base components of the emulsion phases are the same – no compatibility issue.

Of course, the method steps of combining/adding the components of the fluid and circulating the fluid in the various rejected method claims are at least implied in the cited references. The physical properties, weight percents of various components and other such limitations of the rejected claims not specifically disclosed in the cited references are obvious in that one of ordinary skill in the art would have used materials having such properties and made compositions with such component proportions in the course of performing routine optimization of these fluids and associated methods. Use of hectorite in a drilling fluid is notoriously well known, and this fact in combination with the teachings on clay in the cited references would have made use of hectorite obvious to one of ordinary skill in the art.

Thus, all of the rejected claims would have been obvious to one of ordinary skill in the art.

8. Claims 1-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNally et al. in US Patent 6,159,906 in view of Carnicom in US Patent 4,436,636. McNally discloses a drilling fluid with improved anti-settling properties. The disclosures of Carnicom have been given in detail previously.

McNally uses a copolymer that is a reaction product of at least one alpha-olefin and at least one alpha,beta-ethylencially unsaturated carboxylic acid anhydride (see column 6, lines 7-19). The anhydride may be maleic and phthalic among others and the olefin may be C2-C8 among other ranges (see column 6, lines 17-50). Weighting agents and clays (like organoclays, smectite, bentonite, hectorite) may be used (see column

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28-52). These copolymers and clays are useful in imparting improved anti-settling properties to invert emulsion drilling fluids based on such oils as diesel and mineral oil (see Abstract and column 7, line 66- column 8, line 6) – this corresponds to a purpose of course.

Mc Nally teaches directly or indirectly, all of the limitations of the rejected claims, except for the use of polyethylene and brine.

Carnicom teaches an invert emulsion type well service fluid containing polyethylene that gives minimal solids settling and reduced fluid loss (see column 1, lines 35-57) - note that it is explicitly taught that the polyolefin is at least partly the reason for these settling and fluid loss properties (see column 2, lines 28-32), and of course, these properties correspond to purposes. The oil phase may be based on diesel and the aqueous phase may be based on fresh water or a brine (see column 2, lines 5-28). The polyethylene may have a melt index of 0.4 and particle size of 25 microns (see column 2, line 60-65). An organophilic lignite, an organophilic clay that may comprise bentonite and/or a weighting agent like barite may be included (see column 3, line 15 to column 4, line 11).

The following quotation from a CCPA case is relevant:

It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. ... the idea of combining them flows logically from their having been individually taught in the prior art. *In re Kerkhoven*, 205 USPQ 1069, 1072 (CCPA 1980).

Thus, given that purposes of fluids of McNally and Carnicom are for well servicing where solids settling (as in cuttings) may be an issue, the rule of Kerkhoven

applies, and it would have been obvious to one of ordinary skill in the art to combine these fluids. This is especially the case, given that the base components of the emulsion phases are the same – no compatibility issue.

Of course, the method steps of combining/adding the components of the fluid and circulating the fluid in the various rejected method claims are at least implied in the cited references. The physical properties, weight percents of various components and other such limitations of the rejected claims not specifically disclosed in the cited references are obvious in that one of ordinary skill in the art would have used materials having such properties and made compositions with such component proportions in the course of performing routine optimization of these fluids and associated methods.

Thus, all of the rejected claims would have been obvious to one of ordinary skill in the art.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 3,455,390 and 4,143,007, as well as US Patent Application Publication 2003/0104949 and 2004/0132625 show compositions and/or methods at least similar to those of the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. R. Richard whose telephone number is 571-272-


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8502. The examiner can normally be reached on M-Th, 8am-6pm and 8am-5pm on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Carlihard


PHILIP TUCKER
PRIMARY EXAMINER
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